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AN ACCOUNT
OF A
CASE OF ANEURISM

BY
ANASTOMOSIS OF THE FOREHEAD,
TREATED BY THE APPLICATION OF LIGATURES.

BY B. C. BRODIE, F.R.S.

SURGEON TO THE KING; AND SURGEON TO ST. GEORGE'S HOSPITAL.



FROM THE FIFTEENTH VOLUME OF THE MEDICO-CHIRURGICAL
TRANSACTIONS, PUBLISHED BY THE MEDICAL AND
CHIRURGICAL SOCIETY OF LONDON.

London:

PRINTED BY G. WOODFALL, ANGEL COURT, SKINNER STREET.

1829.

7/24/00



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Read January 27th, 1829.

THE disease which Mr. John Bell has described under the name of Aneurism by Anastomosis* is,

* I have employed the term Aneurism by Anastomosis, because it has become (in this country at least) sanctioned by custom, and for the purpose of avoiding the inconvenience which attends the frequent change of surgical nomenclature. At the same time I must acknowledge that it appears to me to be liable to more than one objection. 1st,—I am not aware that it has been proved that there is in these cases any actual increase of the anastomosis which naturally exists between the smaller arteries. The phenomena of the disease are sufficiently explained on the supposition of the arteries being simply dilated, and elongated, and thereby rendered tortuous; and the very interesting dissection recorded by Mr. Mayo in the Medical Gazette, Vol. I. p. 261, renders it pro-

according to my experience, of comparatively rare occurrence. Three cases of the kind however have been already recorded in the Transactions of this Society, and to these I am now induced to add a fourth, the history of which will probably be deemed not devoid of interest, inasmuch as the disease had existed for many years, gradually increasing until it had reached an alarming extent, and after other methods of treatment had been employed to no purpose, was ultimately cured by a very simple operation, founded on the same principle with that, which Mr. White and Mr. Lawrence have recommended in cases of the vascular nævus of infants.

Miss —, in the year 1809, being then about five years of age, received a severe blow on the forehead, in consequence of her having run against the corner of a bed-post. Soon afterwards a small pulsating tumor, not larger than a pea, was observed at the part on which the blow was inflicted. For many years the tumor remained nearly stationary, and as it produced no inconvenience, it excited but little attention. In the year 1821 it had manifestly increased in size, in consequence

bable that this is the only change that really takes place in the condition of the blood-vessels. 2nd,—The term aneurism by anastomosis might with equal propriety be applied to some other blood-vessel tumors, certain nævi for example, which nevertheless differ from the disease in question in many essential circumstances.

of which a surgeon in London was consulted, who attempted to cure the disease by pressure. For this purpose compresses were applied over the tumor, secured by a tight bandage round the head. Under this treatment the patient suffered from a constant and severe pain, and so far was it from being of any service, that, as soon as the pressure was left off, the tumor seemed to grow more rapidly, and the pulsation in it became stronger than before. From this time also there were frequent attacks of intense head-ach, which were to be relieved only by blood-letting.

After this no local treatment was resorted to, until the year 1824, when the tumor having increased to a still larger size, another attempt to restrain its growth by pressure was instituted under the direction of Sir Astley Cooper, but with no more favourable result than formerly.

In the end of June 1826, the disease having made still further progress, Sir Astley Cooper was again consulted, and by him a ligature was applied, (at four different times) round each of the four principal arteries by which the tumor was supplied. The result of these operations was, a slight diminution in the size of the tumor, and some relief from pain; but even this favourable change was of short duration. In the course of the winter of 1827, the tumor again grew larger, and the painful sensations returned with redoubled violence,

attended with a constant sense of weight over the eyes, and excessive depression of spirits. Occasionally there were paroxysms of pain still more violent than what was usually experienced, and followed by a state of extreme languor and exhaustion.

Miss — remained precisely in this state, except that the tumor continued slowly to enlarge, until the 9th of October 1828, when she arrived in London, after an absence of many months, and I saw her in consultation with Dr. Robertson, of Northampton. The tumor was now bigger than a large double walnut, occupying a spot on the right side of the forehead, immediately below the margin of the hairy scalp. When the fingers were applied to it, they received an impression as if it was composed of a mass of tortuous vessels, and a strong pulsation was perceptible in every part of it. The skin covering the tumor was thin, and on some occasions, as in coughing, when the vessels were unusually distended, it appeared as if on the point of bursting. When the scalp was shaved, large and tortuous arteries were to be seen, even from a considerable distance, passing into the basis of the tumor, in every direction, from each temple, from the orbit of the right eye, and over the crown of the head from the occiput. Pressure being made on the two temporal arteries at the same instant, the pulsation of the tumor was perceptibly, but not greatly, diminished. There was

a constant sense of weight and pain in the forehead, and the latter was very much aggravated by pressure on the tumor, especially on a particular spot towards its upper edge.

The sufferings of the patient were such that she was willing to submit to any plan of treatment which might afford her even a chance of being relieved. On considering the subject, it appeared to Dr. Robertson and myself that there was no reason to expect advantage from any further attempt to obliterate the arteries by which the tumor was supplied with blood, nor indeed from any operation which had not for its object the complete extirpation and removal of the diseased structure. But the attempt to accomplish this object by means of the knife, would necessarily be made at the risk of a most alarming hæmorrhage, and the application of the actual cautery or of caustic would not only be uncertain as to the result, but, if carried to a sufficient extent completely to answer the intended purpose, might occasion such injury to the bone and periosteum, as would be productive of much subsequent inconvenience, if not actual danger, to the patient. Under these circumstances Dr. Robertson immediately assented to the proposal which I made, that I should endeavour to extirpate the tumor by means of ligatures, so applied as to produce the complete strangulation of it at its base. There seemed at any rate to be no more effectual, nor

any safer method of proceeding, but even with respect to this, it was impossible not to experience in the first instance considerable apprehensions as to the loss of blood, which might take place on the separation of the slough. These apprehensions were however greatly diminished, if not altogether removed, in consequence of the conviction which we felt, that the unusual dilatation of the principal arteries of the scalp, was to be regarded as the effect, and not the cause, of the morbid growth of the smaller vessels, and as being likely to subside immediately on the tumor being destroyed.

A further consultation having been held with Mr. Keate, and afterwards with Sir Astley Cooper, and both these gentlemen having agreed in opinion with Dr. Robertson and myself, I proceeded to perform the operation, on which we had determined, on Wednesday the 15th of October, in the following manner.

A long steel needle, the length of which was about double the diameter of the tumor, was passed between it and the periosteum, penetrating the skin on each side. By means of this needle the tumor was raised as much as possible, and a second needle was introduced in the same manner, but beneath, and at right angles to, the first. A very strong silk ligature was then bound several times round the base of the tumor below the

needles as tight as it could be drawn. The tumor immediately assumed a purple colour, as if in a state of strangulation. The operation occasioned great pain both at the time and afterwards; but from the instant of the ligature having been applied, the peculiar sufferings occasioned by the disease were at an end.

In the evening the pulse being strong, the skin hot, and the pain caused by the ligature very severe, some blood was taken from the arm.

October 16th. The pain was somewhat abated, the tumor had assumed a dark colour, and had begun to shrink.

October 17th. The tongue was furred, the pulse hard and frequent, and the skin hot. More blood was taken from the arm.

October 18th. All the arteries entering the tumor had either ceased to pulsate or pulsated less strongly than before, with the exception of those at the upper part. Concluding from this last circumstance that the strangulation was not everywhere complete, and that a still greater degree of compression was necessary, I armed one of the needles with a strong double ligature, then drew it through, and having removed the needle, tied the ligatures one on each side.

October 20th. The other needle was armed in the same manner, and by means of it another double ligature was passed through the base of the tumor, and tied like the former one.

October 22d. The slough had begun to separate at its edges, and all severe pain had ceased. The pulsation at the arteries at the upper part was greatly diminished.

October 26th. The slough came away without the smallest hæmorrhage. Dry lint, with stripes of adhesive plaster over it, was applied to the ulcerated surface.

In the course of a few days the ulcer had assumed a healthy appearance, and had begun to granulate.

The appearance of the ulcer was very carefully watched, and two or three times the nitric acid was applied to some spots on its surface, in which there was an appearance that led Mr. Keate and myself to suspect that there might be a disposition to reproduce the original disease. The sloughs made by the nitric acid soon separated; the sore continued to heal, and the pulsation of the arteries in the neighbourhood to diminish.

December 2d. The cicatrix was completely

formed, and nothing unusual was to be observed except that between it and the eyebrow there was a slight appearance of fullness, manifestly depending on the skin at this part having been for a long time much distended, and having not yet returned to its original dimensions. There was no more pulsation in the arteries, which had formerly been so much enlarged, than in those of the other side of the forehead, and the patient was free from pain and all other inconvenience.

THE END.

